Kotlin - When Expression

Consider a situation when you have large number of conditions to check. Though you can use **if..else if** expression to handle the situation, but Kotlin provides **when** expression to handle the situation in nicer way. Using **when** expression is far easy and more clean in comparison to writing many **if...else if** expressions. Kotlin **when** expression evaluates a section of code among many alternatives as explained in below example.

Kotlin **when** matches its argument against all branches sequentially until some branch condition is satisfied.

> Kotlin **when** expression is similar to the **switch** statement in C, C++ and Java.

Example

```
fun main(args: Array<String>) {
   val day = 2

   val result = when (day) {
     1 -> "Monday"
     2 -> "Tuesday"
     3 -> "Wednesday"
     4 -> "Thursday"
     5 -> "Friday"
     6 -> "Saturday"
     7 -> "Sunday"
     else -> "Invalid day."
   }
   println(result)
}
```

When you run the above Kotlin program, it will generate the following output:

```
Tuesday
```

Kotlin when as Statement

Kotlin **when** can be used either as an expression or as a statement, simply like a switch statement in Java. If it is used as an expression, the value of the first matching branch becomes the value of the overall expression.

Example

Let's write above example once again without using expression form:

```
fun main(args: Array<String>) {
   val day = 2

   when (day) {
     1 -> println("Monday")
     2 -> println("Tuesday")
     3 -> println("Wednesday")
     4 -> println("Thursday")
     5 -> println("Friday")
     6 -> println("Saturday")
     7 -> println("Sunday")
     else -> println("Invalid day.")
   }
}
```

When you run the above Kotlin program, it will generate the following output:

```
Tuesday
```

Combine when Conditions

We can combine multiple **when** conditions into a single condition.

Example

```
fun main(args: Array<String>) {
   val day = 2

   when (day) {
     1, 2, 3, 4, 5 -> println("Weekday")
     else -> println("Weekend")
   }
}
```

When you run the above Kotlin program, it will generate the following output:

```
Weekday
```

Range in when Conditions

Kotlin ranges are created using double dots **..** and we can use them while checking **when** condition with the help of **in** operator.

Example

```
fun main(args: Array<String>) {
   val day = 2
```

```
    when (day) {
      in 1..5 -> println("Weekday")
      else -> println("Weekend")
    }
}
```

When you run the above Kotlin program, it will generate the following output:

```
Weekday
```

Expression in when Conditions

Kotlin **when** can use arbitrary expressions instead of a constant as branch condition.

Example

```
fun main(args: Array<String>) {
    val x = 20
    val y = 10
    val z = 10

    when (x) {
        (y+z) -> print("y + z = x = $x")
        else -> print("Condition is not satisfied")
    }
}
```

When you run the above Kotlin program, it will generate the following output:

```
y + z = x = 20
```

Kotlin when with block of code

Kotlin **when** braches can be put as block of code enclosed within curly braces.

Example

```
fun main(args: Array<String>) {
    val day = 2

    when (day) {
      1 -> {
         println("First day of the week")
         println("Monday")
      }
      2 -> {
         println("Second day of the week")
```

```
            println("Tuesday")
        }
        3 -> {
            println("Third day of the week")
            println("Wednesday")
        }
        4 -> println("Thursday")
        5 -> println("Friday")
        6 -> println("Saturday")
        7 -> println("Sunday")
        else -> println("Invalid day.")
    }
}
```

When you run the above Kotlin program, it will generate the following output:

```
Second day of the week
Tuesday
```

Quiz Time (Interview & Exams Preparation)

Q 1 - Which of the following is true about Kotlin when expression?

A - It is used to compare a single value against multiple conditions

B - Kotlin when expression can be used in place of if..else if expression

C - Kotlin when branches can be integer, string, array or ranges

D - All of the above

Q 2 - Kotlin when can be used as an expression as well as a statement?

A - True

B - False

Q 3 - Kotlin when is inspired by which of the following Java statement

A - switch statement

B - if statement

C - do...while statement

D - None of the above